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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,828	12/29/2003	Han-Hsing Liu	DAF009 US	7167
34036	7590	01/26/2005	EXAMINER	
SILICON VALLEY PATENT GROUP LLP 2350 MISSION COLLEGE BOULEVARD SUITE 360 SANTA CLARA, CA 95054			BERRY, RENEE R	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,828

Applicant(s)

LIU, HAN-HSING

Examiner

Renee R Berry

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group II in the reply filed on July 16, 2004 is acknowledged.

Claims 1-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 16, 2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,492,250 to Horiuchi et al. in view of US Patent No. 6,281,052 to Shinmura.

In regards to claim 22, Horiuchi teaches a polycide gate structure, comprising:

- (1) a polysilicon structure formed upon said substrate and having laterals;
- (2) an insulating structure disposed on said laterals of said polysilicon structure for insulating said polysilicon structure;
- (3) a silicide structure formed upon said polysilicon structure and having

laterals at column 5, lines 9-26.

In regards to claim 23, Horiuch teaches the structure as claimed in claim 22, wherein said insulating layer is silicon dioxide (SiO_2) at column 3, lines 36-38.

In regards to claim 24, Horiuch teaches the structure as claimed in claim 22, wherein said silicide layer upon said polysilicon layer comprises a barrier, a tungsten layer and a silicon nitride (SiN_x) layer in sequence at column 3, lines 36-38.

In regards to claim 28, Horiuch teaches the structure as claimed in claim 22, wherein said protecting layer is silicon nitride (SiN_x) at column 3, lines 36-38.

In regards to claim 29, Horiuch teaches the structure method as claimed in claim 22, wherein said polysilicide structure is defined via an anisotropic dry etcher at column 3, lines 40-44.

In regards to claim 30, Horiuch teaches the structure as claimed in claim 22, wherein said insulating structure is formed by means of a dry oxidation method at column 3, lines 63-65.

In regards to claim 31, Horiuch teaches the structure as claimed in claim 22, wherein said polycide structure is defined via anisotropic dry etcher at column 3, lines 40-44.

In regards to claim 32, Horiuch teaches the structure as claimed in claim 22, wherein said protecting structure is defined via an anisotropic dry etcher at column 3, lines 40-44.

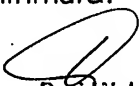
However, Horiuch does not teach all the limitations of the claims.

In regards to claim 25, Shinmura teaches the structure as claimed in claim 24, wherein said barrier is titanium nitride (TiN) at column 3, lines 16-19

In regards to claims 1 and 26, Shinmura teaches the structure as claimed in claim 22, wherein said protecting layer is formed by means of chemical vapor deposition (CVD) and (4) a protecting structure disposed on said laterals of said silicide structure of protecting said silicide structure at column 4, lines 66-67.

In regards to claim 27, Shinmura teaches the structure as claimed in claim 22, wherein said protecting layer has a thickness ranged from 50 to 500 Angstroms at column 4, lines 15-16.

Therefore, it would have been obvious to one of ordinary skill in the art to have at the time the invention was made to have modified Horiuch to include forming a barrier layer of titanium nitride (TiN); forming a protecting layer having a thickness ranged from 50 to 500 Angstroms; and having a protecting layer formed by means of chemical vapor deposition (CVD), since such a modification would result in eliminating breakdown voltage, as described in column 2, lines 39-44 of Shinmura.


David Nelms
Supervisory Patent Examiner
Technology Center 2800